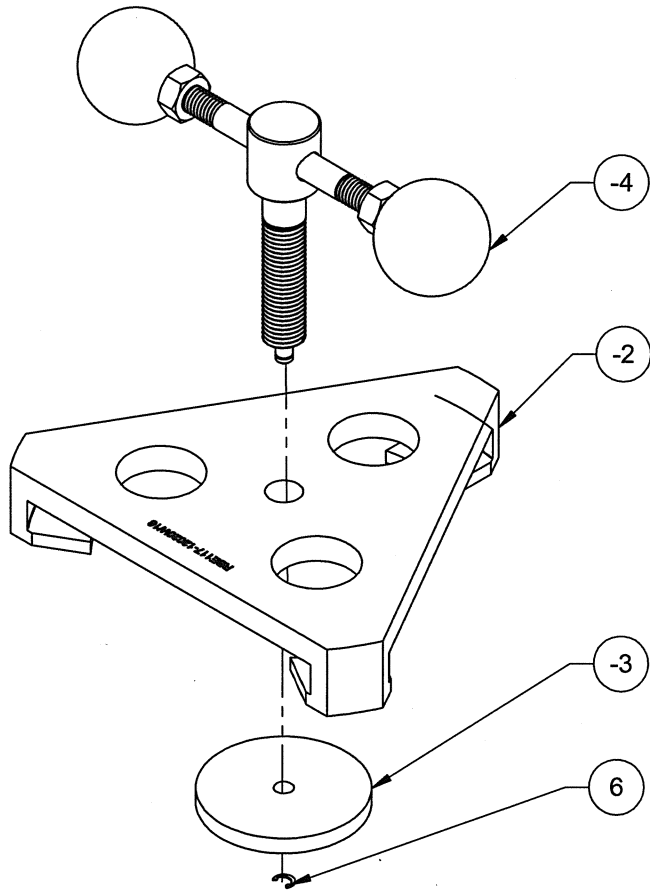
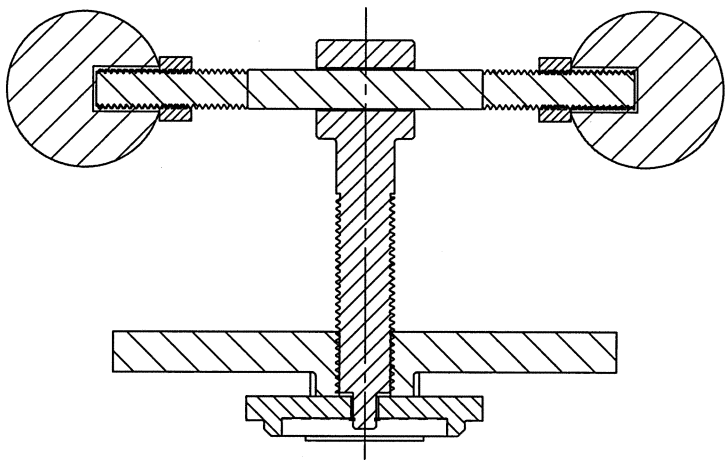
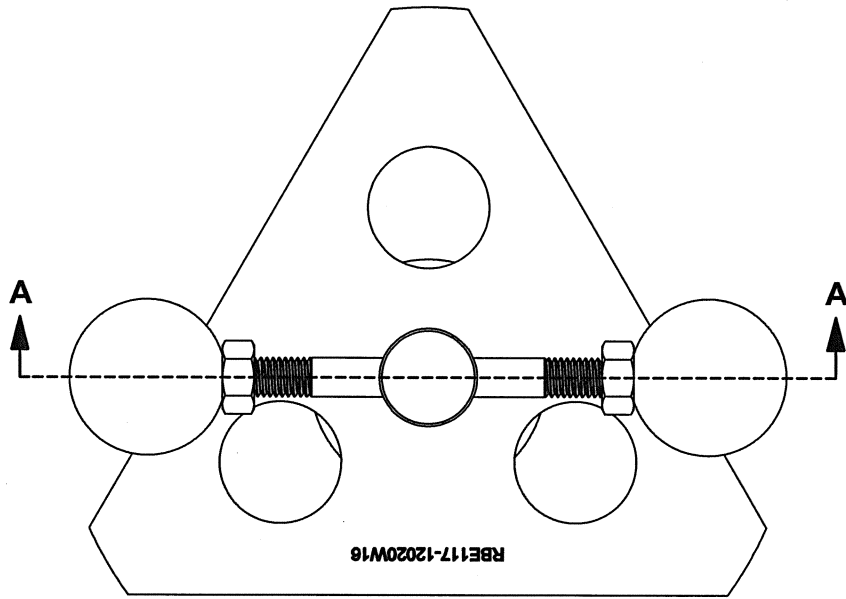


ITEM #	QTY	PART #	PART TITLE
-2	1	RBE117-12020W16-2	FRAME ASSY
-3	1	RBE117-12020W16-3	EXTRACTOR
-4	1	RBE117-12020W16-4	HANDLE ASSY
6	1	McMaster#97414A620 OR EQUIV	BLACK PHOSPHATE SPRING STEEL LOW-CLEARANCE EXTERNAL RETAINING RING FOR 3/16" OD

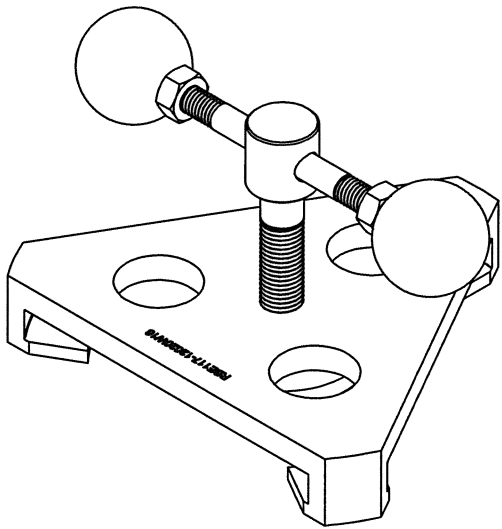


RBE117-12020W16 BASE EXTRACTOR FREE WHEEL

8



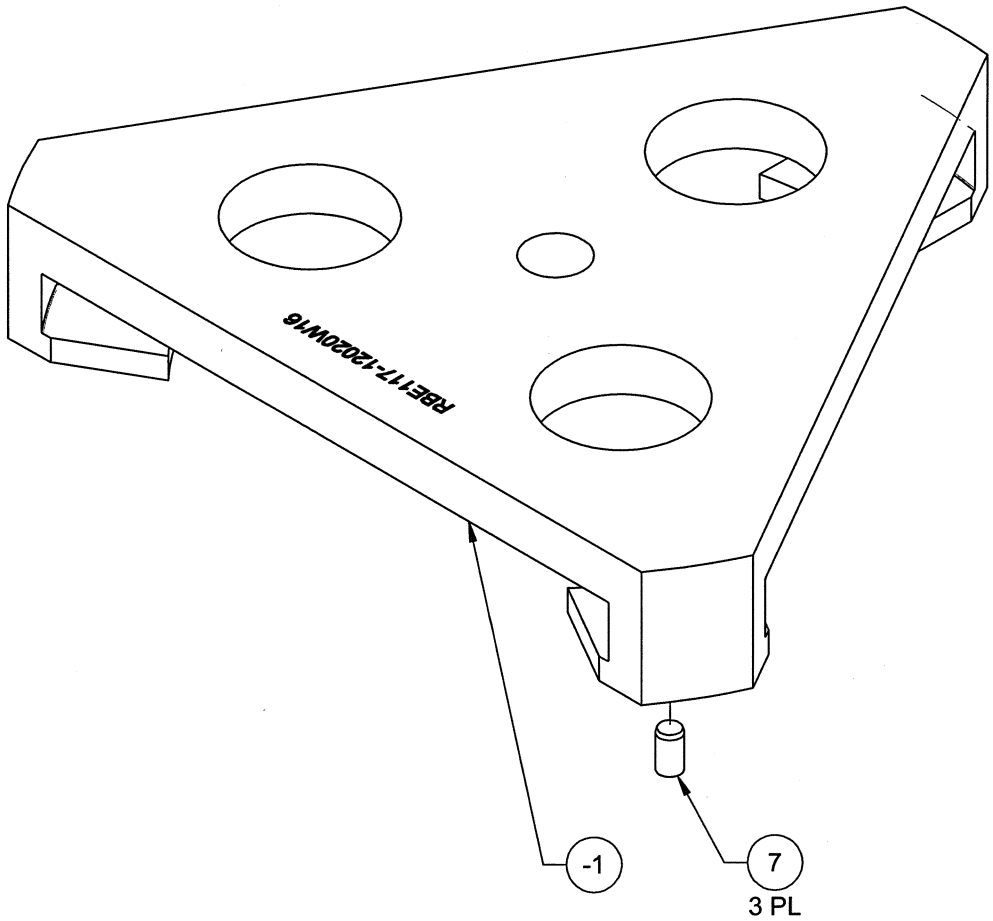
SECTION A-A



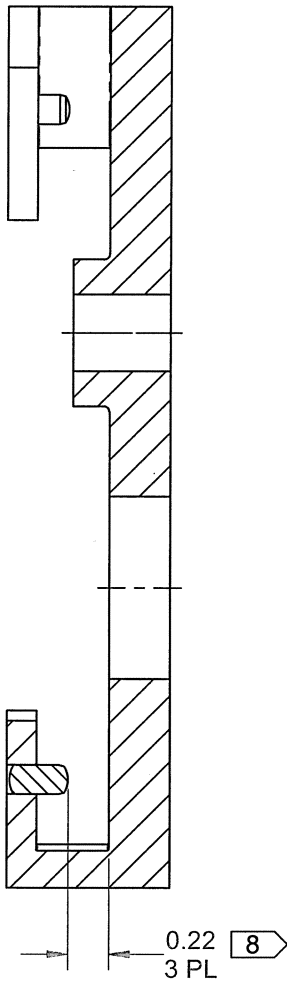
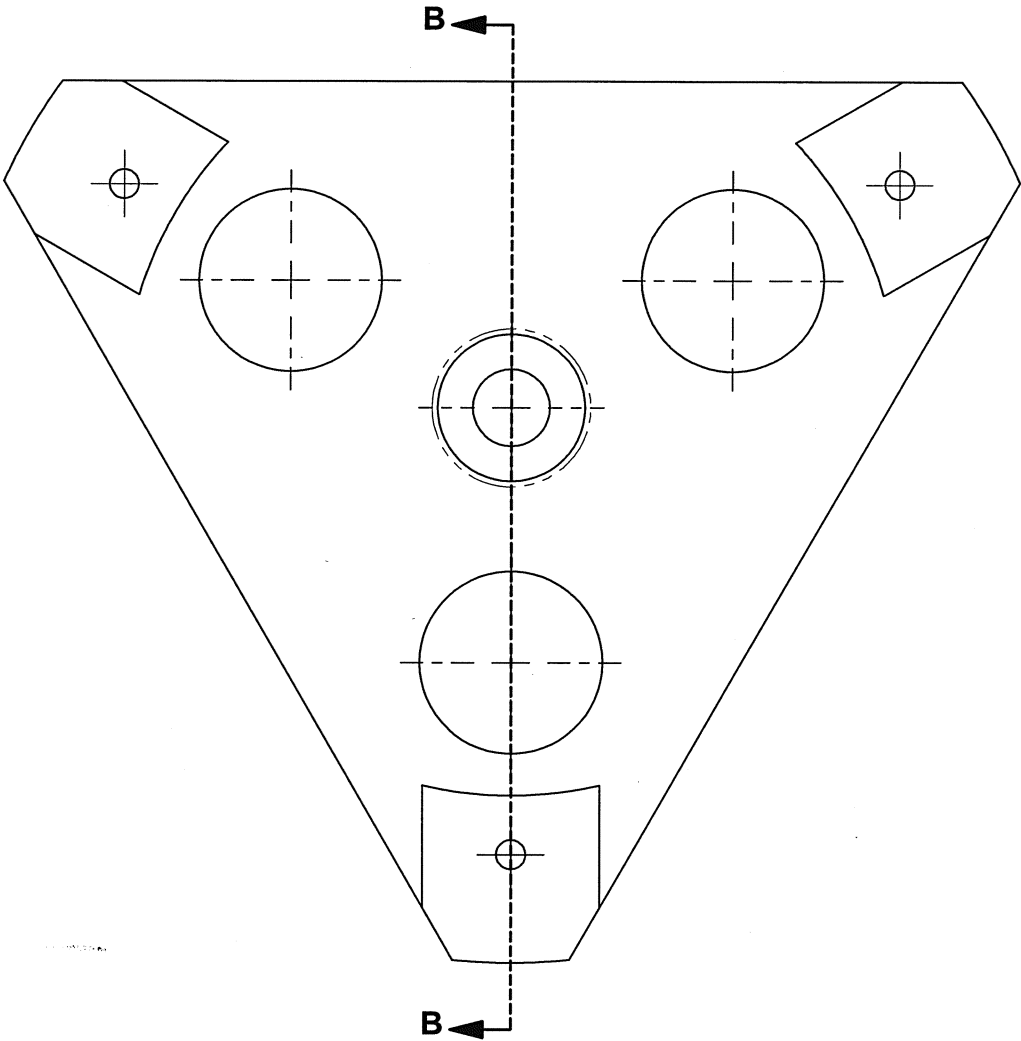
- NOTES:
- 1) MATERIAL: N/A
  - 2) HEAT TREAT: N/A
  - 3) FINISH:
  - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
  - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 6) IDENTIFICATION: N/A
  - 7) ASSEMBLE AS SHOWN
  - 8) THE TOOL ASSY MUST BE PACKAGED WITH A DESICCANT BAG INTO A TIGHT FITTING SEALED PLASTIC BAG

B	-1 DIM WAS 0.255 IS 0.200, REFER TO NCR 19-7374 FOR DETAILED EXPLANATION	19-913	KPT
A	FOR OLDER REV's SEE PREVIOUS PDF's TEMPLATE UPDATED PER DART HBY STANDARDS ITEM -2 ASSY ADDED ITEM -4 ASSY ADDED ITEM -11 CHANGED FOR ITEM 6 ITEM -13 DOWEL PIN CHANGED FOR ITEM 7 McMaster#91595A150 ITEM -7 CHANGED FOR ITEM 10 ITEM -9 CHANGED FOR ITEM 9 ITEM -15 McMaster#90685A045 CHANGED FOR ITEM 8 McMaster#92497A400 ITEM -1 DIMENSION 4.126 CHANGED FOR 4.157 +/-0.001, DIMENSION 3X 60° REMOVED, DIMENSION 2.371 REMOVED, DIMENSION .325 REMOVED, DIMENSION 0.390 +0.007/-0 ADDED, DIMENSION R0.03 ADDED, DIMENSION Ø .790 CHANGED FOR Ø 0.79, DIMENSION 1.75 ADDED, DIMENSION .195 CHANGED FOR 0.20, DIMENSION 3.600 +/- 0.001 2 PL ADDED, DIMENSION Ø .1574/.1569 EQUALLY SPACED CHANGED FOR Ø 0.1574/0.1566 3 PL, DIMENSION Ø 5.455 REMOVED, DIMENSION BC Ø 4.801 REMOVED, DIMENSION (3X 4.825) CHANGED FOR 4.825 3 PL, DIMENSION R2.085 CHANGED FOR Ø 4.170 3 PL, MATERIAL 4140 RC 40-44 CHANGED FOR 4140 RC 40-45, FINISH BLACK OXIDE REMOVED, ENGRAVING S/N AND "MADE IN USA" REMOVED ITEM -3 MATERIAL 1018 CHANGED FOR 4140 (28-32 Rc), FINISH BLACK ANODIZE CHANGED FOR BLACK OXIDE, DIMENSION R0.008" MAX 2 PL ADDED, DIMENSION Ø 1.900 CHANGED FOR Ø 1.900 +/- 0.005, DIMENSION Ø 1.330 CHANGED FOR Ø 1.330 +0.005/-0, DIMENSION Ø 1.615 CHANGED FOR Ø 1.615 +/-0.005 ITEM -5 MATERIAL 4140 Q&T CHANGED FOR 4140 (28-32 RC), DIMENSION 3.128 CHANGED FOR 3.13, DIMENSION .793 REMOVED, DIMENSION (.47) REMOVED, DIMENSION .395 CHANGED FOR 0.40, DIMENSION Ø .790 CHANGED FOR Ø 0.79, CENTER DRILL NOTE ADDED, DIMENSION R0.03 ADDED, MIN THREAD RELIEF ADDED, DIMENSION Ø 0.468 CHANGED FOR Ø 0.47, DIMENSION 2.34 ADDED, DIMENSION 1.61 ADDED, DIMENSION .290 CHANGED FOR 0.29, DIMENSION 0.204 ADDED, DIMENSION .022/.020 CHANGED FOR 0.021 +0.002/-0, DIMENSION R0.008 MAX ADDED, DIMENSION .065 REMOVED	19-900	VM
REV.	DESCRIPTION	ECN #	BY
DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	KPT		
CHECKED	ZF	TOOL PART #	REV. B
MFG. APPR.	DP	RBE117-12020W16	SHEET 1 OF 6
APPROVED		TITLE	SCALE
DATE	2019-09-23	BASE EXTRACTOR FREE WHEEL	NTS
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ITEM #	QTY	PART #	PART TITLE
-1	1	RBE117-12020W16-1	FRAME
7	3	McMaster#91595A150 OR EQUIV	STEEL DOWEL PIN 4mm DIA. x 8mm LG.



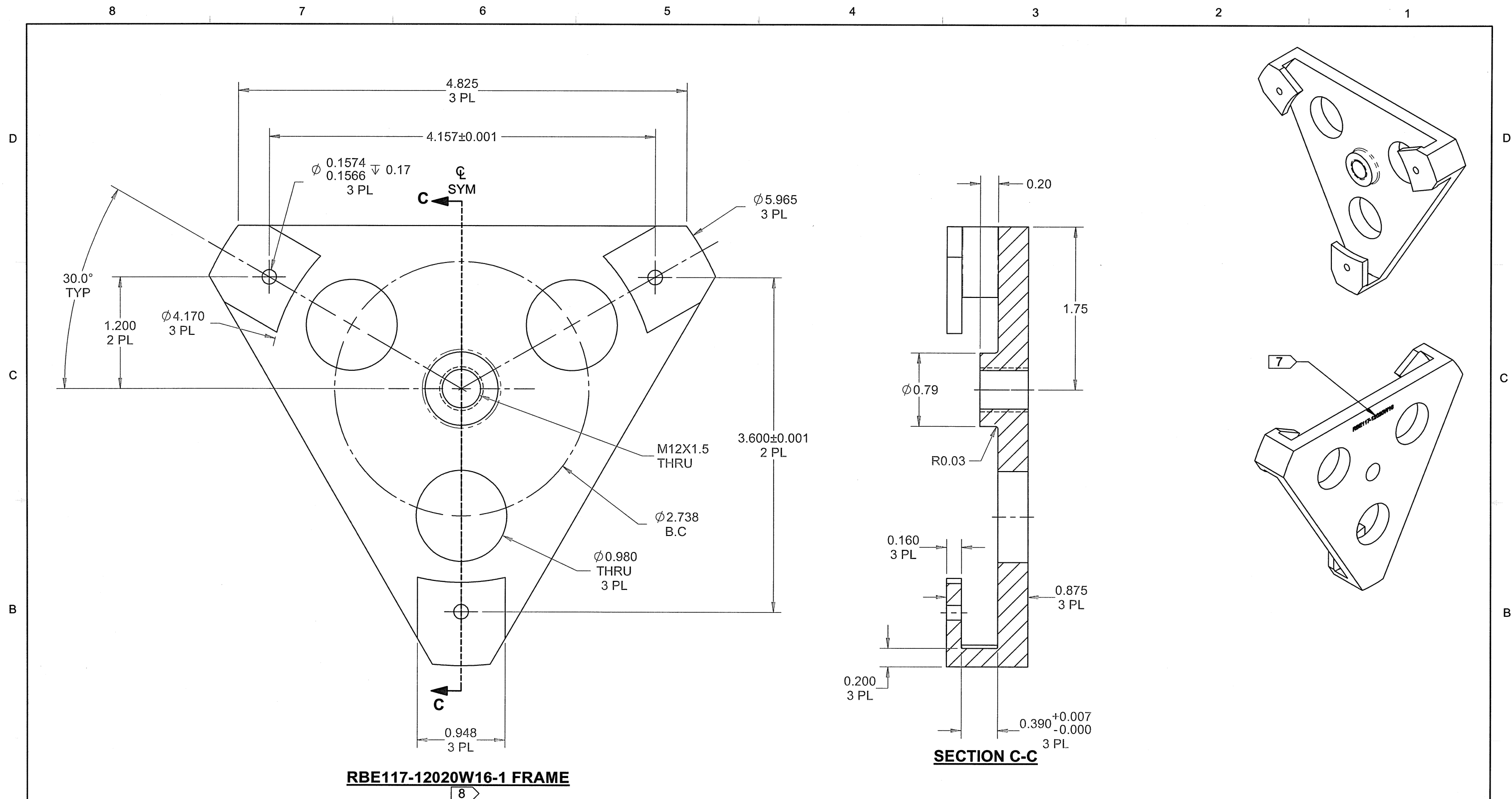
**RBE117-12020W16-2 FRAME ASSY**



**SECTION B-B**

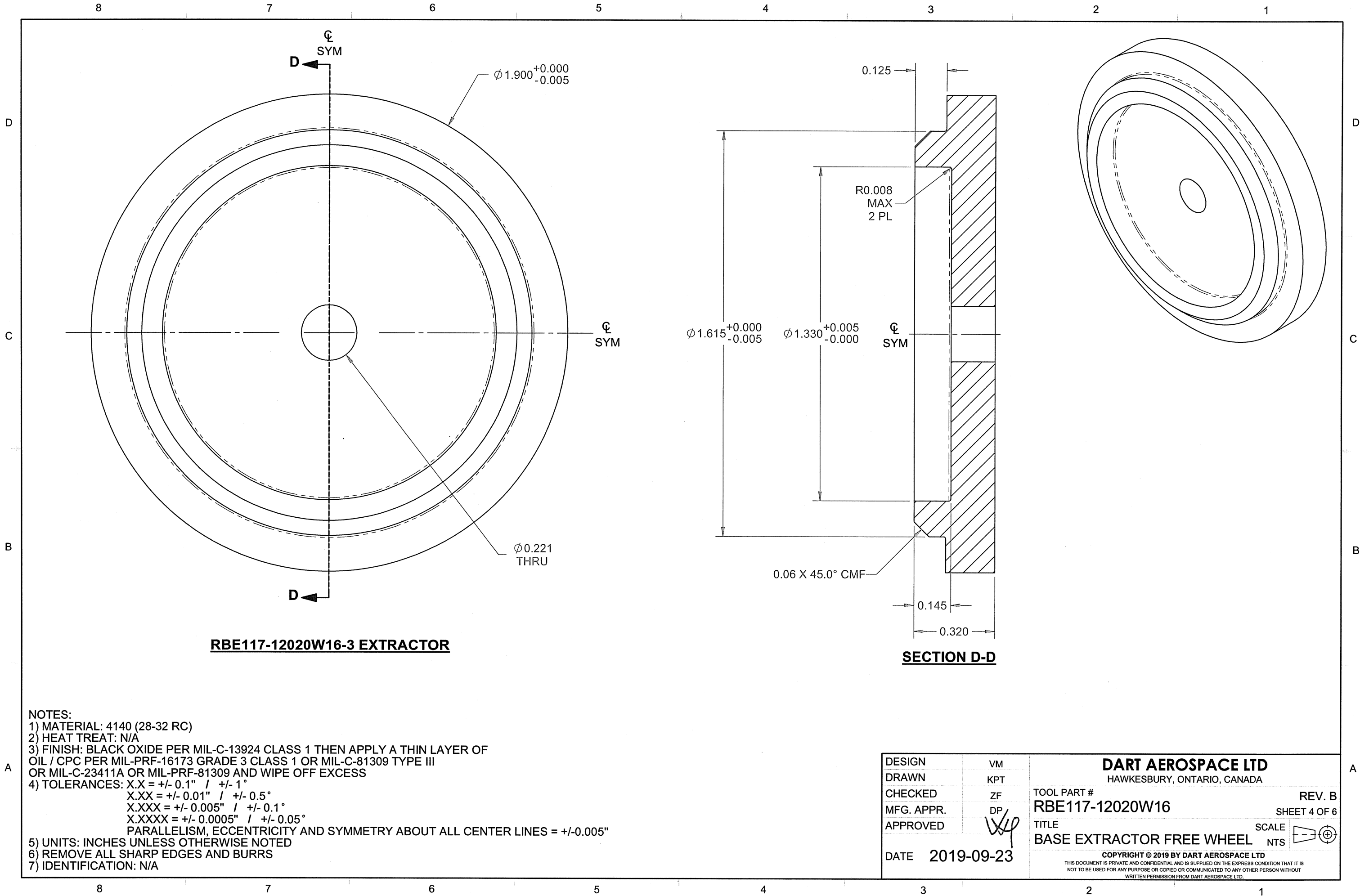
- NOTES:
- 1) MATERIAL: N/A
  - 2) HEAT TREAT: N/A
  - 3) FINISH: BLACK OXIDE PER MIL-C-13924 CLASS 1 THEN APPLY A THIN LAYER OF OIL / CPC PER MIL-PRF-16173 GRADE 3 CLASS 1 OR MIL-C-81309 TYPE III OR MIL-C-23411A OR MIL-PRF-81309 AND WIPE OFF EXCESS
  - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
  - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 6) IDENTIFICATION: N/A
  - 7) ASSEMBLE AS SHOWN
  - 8) APPLY RETAINING COMPOUND LOCTITE 620 OR EQUIVALENT ON MATING SURFACES THEN PRESS FIT ITEM 7 WITH ITEM -1, AND REMOVE EXCESS

DESIGN	VM	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	KPT		
CHECKED	ZF	TOOL PART #	REV. B
MFG. APPR.	DP	<b>RBE117-12020W16</b>	SHEET 2 OF 6
APPROVED		TITLE	SCALE
DATE	2019-09-23	<b>BASE EXTRACTOR FREE WHEEL</b>	NTS
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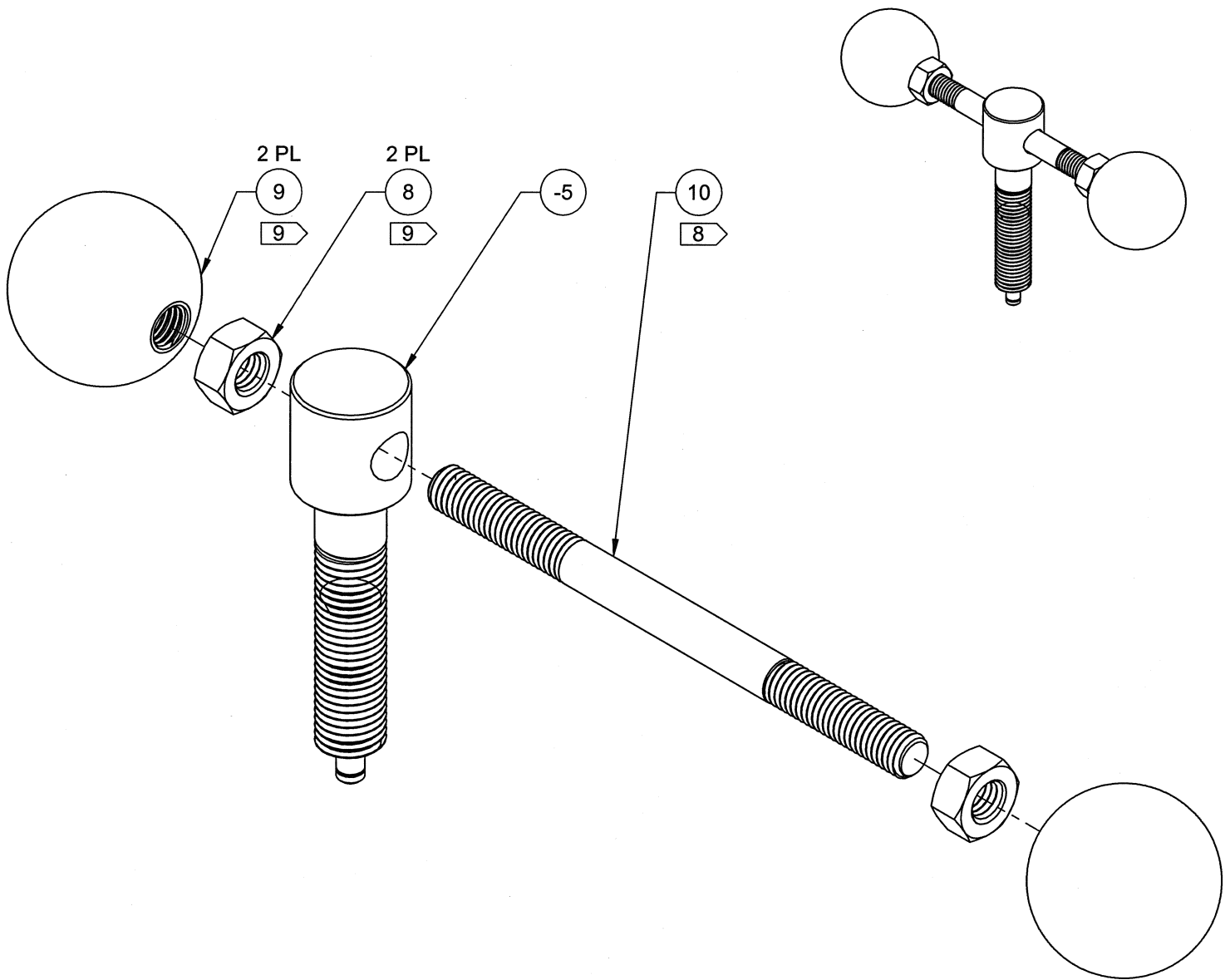


- NOTES:
- 1) MATERIAL: 4140
  - 2) HEAT TREAT: 40-45 Rc
  - 3) FINISH: N/A
  - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/- 0.005"
  - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 6) REMOVE ALL SHARP EDGES AND BURRS
  - 7) IDENTIFICATION: MACHINE ENGRAVE OR DOT MARK T/N, "RBE117-12020W16", AS SHOWN
  - 8) ALL NON-DIMENSIONED FEATURES MUST MAINTAIN A TOLERANCE OF +/- 0.005" PER CAD FILE RBE117-12020W16-1 REV. B.STEP

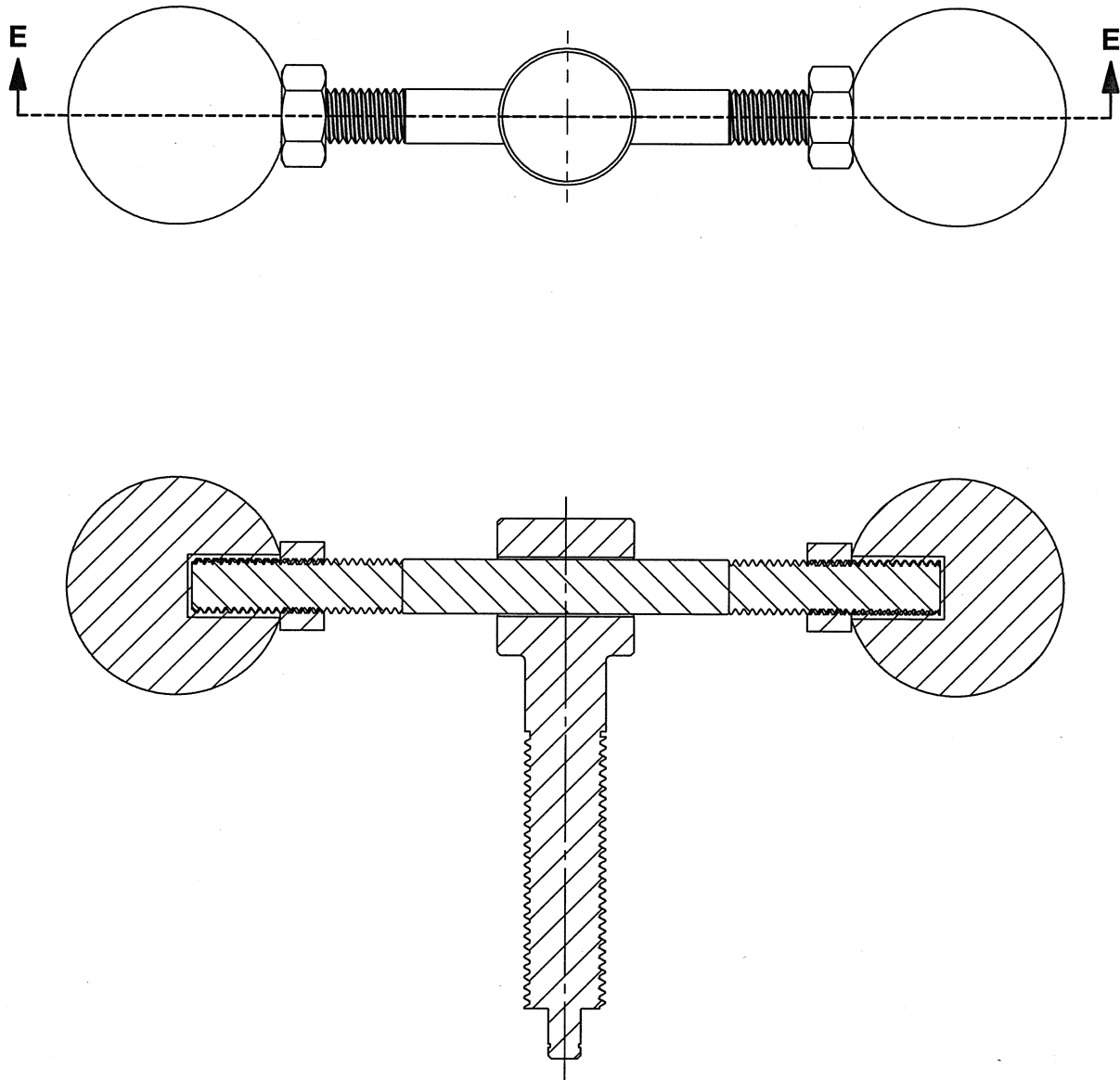
DESIGN	VM	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	KPT		
CHECKED	ZF	TOOL PART #	REV. B
MFG. APPR.	DP	<b>RBE117-12020W16</b>	SHEET 3 OF 6
APPROVED		TITLE	SCALE
		<b>BASE EXTRACTOR FREE WHEEL</b>	NTS
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ITEM #	QTY	PART #	PART TITLE
-5	1	RBE117-12020W16-5	SCREW
8	2	McMaster#92497A400 OR EQUIV.	ZINC YELLOW PLATED GRADE 10 STEEL HEX NUT M8 X 1.25mm X 6.5mm HT.
9	2	McMaster#6630T220 OR EQUIV	BLACK POLYPROPYLENE BALL KNOB WITH M8 X 1.25 THREADED HOLE X 32mm HEAD DIA.
10	1	McMaster#93275A034 OR EQUIV	BLACK OXIDE STEEL STUD M8 X 1.25 X 110mm LG.



**RBE117-12020W16-4 HANDLE ASSY**



**SECTION E-E**

**NOTES:**

- 1) MATERIAL: N/A
- 2) HEAT TREAT: N/A
- 3) FINISH: N/A
- 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) IDENTIFICATION: N/A
- 7) ASSEMBLE AS SHOWN
- 8) APPLY RED THREADLOCKER LOCTITE 263/262 ON THREADS OF ITEM 10 THEN ASSEMBLE WITH ITEM 8 AND ITEM 9, AND REMOVE EXCESS
- 9) INSTALL ITEM 8 AND ITEM 9 HAND TIGHT

DESIGN	VM	<b>DART AEROSPACE LTD</b>	
DRAWN	KPT	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ZF	TOOL PART #	REV. B
MFG. APPR.	DP	<b>RBE117-12020W16</b>	SHEET 5 OF 6
APPROVED		TITLE	SCALE
		<b>BASE EXTRACTOR FREE WHEEL</b>	NTS
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